

ABSTRACT

The present invention relates to a system and method of managing DSP resources within a network interface system (NIS). A Digital Signal Processing (DSP) resource manager dynamically allocates DSP resources to ensure that a DSP resource is always available to process an incoming call. The DSP resource manager reserves a sufficient number of DSP resources in a PCM group in order to ensure processing of any active communication channels. Each time a call is received and assigned to a T1 channel, the DSP resource manager recalculates the number of idle voice channels and the number of PCM resource channels which must be reserved to ensure processing of all idle voice channels. The DSP resource manager also recalculates DSP resource availability in the PCM group each time a call is deactivated. By tracking the number of idle voice channels in the system as well as the number of idle DSP resource channels in the PCM group, the DSP resource manager can reallocate the resources as necessary to optimize the ability of the system to fulfill enhanced compression mode requests, while also ensuring that there are sufficient resources available to process any call in PCM mode.